

# Faculté de pharmacie

## Séminaire de l'axe

« Pharmacométrie et pharmacothérapie »



### «Nanovaccines and T-Cell Biophysics at the Interface of Autoimmunity and Quantitative Biology»

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Pavillon Jean-Coutu

S1-125 – 12h00

À l'invitation de la professeure Fahima Nekka

Type 1 diabetes is an autoimmune disease that results from T-cell mediated destruction of insulin-secreting pancreatic beta cells. The destruction of beta cells eventually leads to the abolition of insulin secretion crucial for regulating glucose homeostasis. It has been shown experimentally that nanoparticles coated with certain surface molecules can expand a clone of protective (low avidity) regulatory T cells capable of aborting disease progression and reversing diabetes. In this talk, I will present our recent findings deciphering the biophysics of T-cell binding with nanoparticles and optimizing their therapeutic efficacy. I will show how Markov Chain Monte Carlo methods are applied to achieve this.

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